PLAY METER

UPDATE EDITION

Volume 5, Number 22 **December 1, 1979**

Seeburg files bankruptcy, plans reorganization

The Seeburg Corporation of Chicago filed a petition under chapter 11 of the U. S. Bankruptcy Code in federal court of the northern district of Illinois October 19.

Chapter 11 is a new law which went into effect October 1 of this year.

The bankruptcy was blamed on difficulties in procuring electronic assemblies of a model during the first four or five months of production last year.

"The buyers failed to supply them," John Chapin, president of Seeburg told PLAY METER. "Because of that, our production schedule was severely restricted, and that distorted the financial picture for the entire year," he said. "We just didn't have the adequate quantities, and it eventually caught up with us. We just had to take a very positive business tactic."

Joseph L. Matz, attorney for the company, reported that "while the word bankruptcy appears in the name of the court and the law under which our case was filed, the reorganization case that we filed is not a bankruptcy case. The case was filed for the purpose of restructuring our financial affairs.

"We are a business—a viable business. We manufacture and sell a fine product and we intend to remain in business, to sell and service our customers," he said. "Please do not be misled by any publicity or rumors to the contrary."

Bernie Cohen, advertising-public relations manager, agreed. "It's not a bankruptcy situation. We're not shutting the doors or anything like that."

Chapter 11 allows a corporation to consolidate its creditors. The bankruptcy court decides what amounts creditors are to receive, although an attorney unrelated to the Seeburg case noted that creditors in such cases "almost always receive less than they've claimed." Although creditors may ask that a corporation be placed in bankruptcy, Seeburg filed the bank petition in this case.

"Without the law, creditors would be able to force bankruptcy, but under the law, when Seeburg goes to court voluntarily and files, we are temporarily protected and given time to reorganize financially," Chapin noted.

"This is to the advantage of the federal and local governments," Chapin asserted. "Then people aren't out of work, etc."

But he ended on a more promising note for Seeburg's future. "Everything here is falling into place," he said. "We're getting a loan of a significant sum, and production schedules are set up. We expect very shortly—probably next week—to start the whole production process when the plan is approved."

A company which files under chapter 11 is given a specified period of time to come up with a program, which is presented to creditors, then negotiated and discussed until agreement is reached between the parties.

Ohio association schedules mechanics school

The Ohio Music and Amusement Association has slated the last of its AMOA-approved mechanics school on digital pinball machines December 3-12 at the Imperial House North in Columbus.

Taught by AMOA's Donald Miller, considered by many to be an expert in teaching repair of coin machines, will lecture on how to read, understand and apply schematics. All circuits, for example, are followed and explained. The sequence of operation is covered using the schematic to determine how the machines operate, as well.

Students learn the use and function of each part. Low and high voltages—causes and effects—are studied. Also, the use of a meter, proper shopping procedures, preventive maintenances, and how to operate digital games with success.

Other topics include how to prevent player abuse and how to make the most money for the location and the operator.

Students will attend class from 9 a.m. to 5 p.m. for ten consecutive days, including Saturday and Sunday.

Registration, which is not to exceed 20, is $200 per person on a "first come, first serve" basis. Meals, lodging and transportation is not included. Apply to OMAA, 41 South High Street, Columbus, Ohio 43215.

Volume 5, No. 20
December 1, 1979

Staff

Publisher and Editor:
Ralph C. Lally II
Editorial Director:
David Pierson
Managing Editor:
Vicki Darlington
International Editor:
David Snook
Editor, *Coin Slot*
Technical Editor:
Zac Oliver
Correspondents:
Pat Matthews
Roger C. Sharpe
Arthur B. Hollander
Douglas McCallum
Art Direction:
Katey Schwark
Circulation Manager &
Classified Advertising:
Valerie Cognevich
Typography:
Vickie Lofton
Advertising Representative:
David Pierson
European Representative:
Esmay Leslie

PLAY METER, December 1, 1979. Volume 5, No. 22. Copyright 1979 by Skybird Publishing Company. PLAY METER (ISSN 0162-1343) is published twice monthly on the 1st and 15th of the month. Publishing offices: 320 Old Hammond Highway, Metairie, La. 70005, P. O. Box 24170, New Orleans, 70184. Tel. 504/838-8025. Subscription rates: U. S. and Canada—$25; Europe and Japan—$45; elsewhere—$50. One order subscription: 2-9, $20 each; 10-24, $17 each; 25 or more, $15 each. Advertising rates available on request. No part of this magazine may be reproduced without expressed permission. The editors are not responsible for unsolicited manuscripts. Second-class postage paid at New Orleans 70113 and additional mailing offices. Postmaster: Send Form 3579 to PLAY METER, P. O. Box 24170, New Orleans, La. 70184.

European office: PLAY METER Promotions, "Harescombe" Watford Road, Northwood Middx. England, Northwood 29244.

Tax clinic:

Using a personal auto for business purposes

QUESTION: How much may I deduct for use of a personal automobile for business purposes?

ANSWER: The deduction for use of a personal automobile for business purposes may be based on one of two available methods, each involving an apportionment of the expenses between business and personal use. Deductible items for automobile expenses include the cost of gasoline, oil, repairs, insurance, depreciation, interest to purchase the car, taxes, licenses, garage rents, parking fees, tolls, and other vehicle expenses.

Expenses incurred for the operation of an automobile must be apportioned between business and personal use, based upon the number of miles driven for business purposes as compared to the number of total miles in a year. If an automobile is used exclusively for business purposes, the entire cost of operation and maintenance may be deducted.

However, expenses for use of an automobile for commuting between the taxpayer's home and principal or regular place of business are considered personal expenses, and non-deductible.

The Internal Revenue Code provides for two acceptable methods of computing the expenses allowable for the operation of an automobile, which are as follows:

—Deduction of the actual operating and fixed expenses of the automobile, including a reasonable amount of depreciation. The yearly depreciation deduction must be further adjusted by the number of months in business use, divided by the entire yearly twelve-month period. Actual expenses must be substantiated with adequate documentation, such as receipts, bills of sale, and other written agreements.

—Deduction of a standard mileage rate of 17-cents per mile for the first 15,000 miles of business use each year, and 10-cents per mile for each succeeding mile, except when the automobile is fully depreciated or considered fully depreciated in a prior year, then it is limited to 10-cents per mile. This method may be used instead of actual operating costs, and parking fees, tolls and the like incurred during business use still are deductible in addition to the standard mileage rate.

Adequate records must be maintained to establish the actual business miles the automobile was driven. Approximations and estimates are not considered acceptable.

The IRS allows the taxpayer a choice of either method, and allows taking the maximum of the two methods of expense. Records, however, should be carefully kept to facilitate the maximum allowable deduction.

—By Comprehensive Accounting Corp. of Aurora, Illinois. Comprehensive provides a bookkeeping, accounting, and tax service to over 14,000 business clients each month through a nationwide network of more than 140 franchised offices.

Calendar

December 3-12
Ohio Music and Amusement Association Digital Mechanics School, Columbus, Ohio

January 17-19
German Coin Machines Manufacturers (VDAI), exhibition grounds, Frankfort, Germany

January 18-20
Music Operators of Minnesota, Minneapolis, Minnesota

January 25-26
Oregon Amusement and Music Operators Association, Jantzen Beach, Portland, Oregon

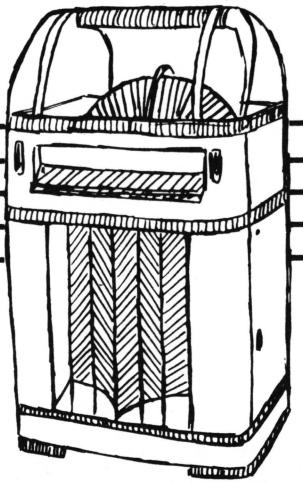
March 20-22
Amusement Operators Expo., Fairmont Hotel, New Orleans, Louisiana

May 16-18
Music and Amusement Association annual convention, Host Farm, Lancaster, Pennsylvania

June 5-7
Music Operators of Texas, El Paso, Texas

MUSIC PROGRAMMING

By Pat Matthews
WQUE New Orleans



You pays yo' money and takes yo' chances this season

Well, Christmas is just about here. Everybody's doing their last minute shopping and looking forward to a New Year. Musically, it should be an interesting one—economically, a gambler's paradise. Here's hoping you and yours have a safe, happy 1980 blessed with the joys that music can bring.

SEND ONE YOUR LOVE—Stevie Wonder—Tamla T 54303F

This is definitely one tailor-made for the season. It also happens to be Stevie Wonder's first recording effort in three years. The song is from the LP "Stevie Wonder's Journey Through The Secret Life Of Plants;" and if that sounds a bit strange, one "listen" to this tender ballad will prove that the magic and genius is still there. "Send One Your Love" has all the elements that have made Stevie Wonder the widely successful singer-composer-producer he is. If you rearrange the words just a little, you'll find my Christmas gift suggestion: "Send Your Love One"...the title of the record. 10 out of 10 or I'll *eat* the mistletoe.

YOU'RE GONNA LOVE YOURSELF IN THE MORNING—Charlie Rich—United Artists UA-X13525-Y

A near symphonic opening ushers in the golden tones of the silver fox on what must be his 400th record. Like a fine wine, his music gets better with age. Basically, the record is just that—simple. But, the strings add a new dimension and just the right touch. It may not cross over into Pop, but should do extremely well in Country and Easy Listening. 8 out of 10.

HEAD GAMES—Foreigner—Atlantic 3633

Now it's time to get into some rock n' roll. The record promoter told me this was supposed to be the initial single release from the LP of the same name, but was saved and "Dirty White Boy" was chosen instead. The latter has done well despite objectionable subject matter and now it's time for the ambiguity of this one. Mick Jones and company rocks on for three plus minutes and gets a 9 out of 10 from this corner.

VIDEO KILLED THE RADIO Star—The Buggles—Island IS 49114

From the absurd to the ridiculous, it's another Buggles record. You see, a record is not to be confused with a song. A song is something you can sing along with once you learn the words. A record is just something you enjoy listening to. "Video" is just that and is full of all sorts of production room techniques. It does have a melody, unlike, let's say, "Revolution 9" by the Beatles. More people than you think will like this one. 7 out of 10 is a safe bet.

IT'S DIFFERENT FOR GIRLS—Joe Jackson—A&M 2186 S

The title is an understatement—the record is a positive statement for the career of Joe Jackson. Sounding more like Elvis Costello this time, Jackson has released a whole new album, from which this is culled. I think the sign of a true artist is never to be content to sit still while the record company pulls single after single, ad nauseum, from an LP, which is exactly what Joe Jackson does. The song is good and that's that. 9 out of 10 or better.

YOU'RE GONNA GET WHAT'S COMING—Bonnie Raitt—Warner Brothers WBS 49116

What more could a singer ask for? She's got a song written by Robert Palmer and a record produced by Peter Asher (of...& Gordon and Linda Ronstadt producing fame). She also possesses one of few remaining gutsy female voices. This one's a mid-tempo rocker which is sung, arranged, produced and played in a winning style. This could be Bonnie Raitt's first commercial success. I don't particularly like the fade at the end, but who's perfect? 7 out of 10 at least.

CHIQUITITA—Abba—Atlantic 3629

What have we got here? A Spanish influenced tune sung by Swedes from an album entitled "Voulez-Vous," that's what! To emphasize the internationality of it all, there's even a Spanish version. The one I'm listening to now is the English version which makes it easy to understand why this should be one of Abba's biggest in quite sometime. It's already been a smash in England. Great vocals as always with some fine keyboard work. Should go places. Ha ha ha ha ha ha...8 out of 10.

SHOOTING STAR—Dollar—Carrere (Atlantic) CAR 7208

The only way you could get your hands on this record not too long ago was to purchase the import. Now Atlantic, which knows a good thing when they hear it, has bought the American rights to this heretofore unknown French group. The song is a bold step as far as rigid production and musical techniques are concerned. Since it was the import that "turned people on," so to speak, it was the disco dee-jays who first heard this little foreign treasure. So, if you frequent upper class disco establishments, you may have heard it. If you don't, you're in for a treat. 9 out of 10 in America...already gold in a handful of European countries.

AMOV convention held Oct. 4-6

The twenty-first annual convention of Amusement and Music Operators of Virginia was held at Howard Johnson's Midtown Lodge in Richmond, Virginia, on October 4, 5, and 6.

Kick-off began Thursday evening with a hospitality session for directors and distributors held in the AMOV President's Suite.

Exhibitors at this year's show included Banner Specialty Company, Brady Distributing Company, General Vending, Peach State Distributing Company, Sefco Distributing, State Sales, Tara Records, and Amusement Emporium.

During the two day session of business meetings, new officers were elected for 1980. They are as follows: C. H. Hudson, president; C. E. Morse, first vice president; John P. Newberry, Jr., second vice president; and Lou Corso, secretary-treasurer.

New directors for 1980 include Arthur Bazaco, Bob Burner, John Cameron, Carl Coleman, Doug Colbert, R. W. Claud, Jim Donnelly, Harry Fake, Lewis Jones, Robert Minor, Ken O'Connor, Arnoff Pantelides, Mary Peery, Richard Peery, Jesse Richardson, Ed Shell, Tom Stanley, Claude Smith, and Rex Whitley.

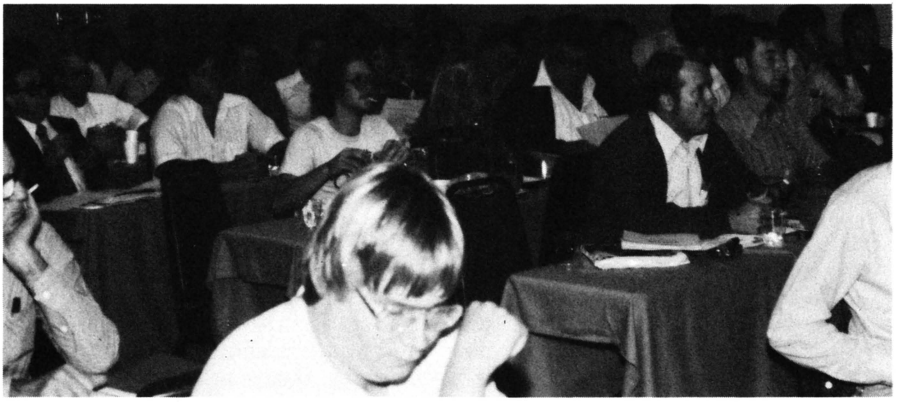
The association was very honored to have as guest speakers for the general sessions Wayne Hesch, president of AMOA, who discussed the AMOA Legal Action Fund; Nick Allen, counsel for AMOA, who discussed the fight against the Copyright Royalty Tribunal (he also urged the support of Virginia operators in opposing bills now being introduced to raise the royalty per jukebox per year); and J. Edgar Pointer, counsel for AMOV, who brought operators up to date on Virginia House Bill 1718, which involves the gross receipts tax and a clarification of the State Attorney General's opinion on the bill.

An added attraction to this year's exhibition was a snooker pool tournament sponsored by Sefco Distributing Company and Dynamo Corporation. Trophies and cue sticks were awarded to the winner and runners-up. The snooker table was presented to the AMOV member operating company that had sponsored the tournament winner.

AMOV was, also, very fortunate in being able to coincide an Atari Mechanics School and a Stern's Electronics Seminar with their convention. This provided an additional highlight for their operator members.

On Saturday evening a banquet and dance concluded one of the largest conventions in AMOV history. Certificates of appreciation were presented to all officers and directors for their service during the past year, and Mrs. John "Dot" Cameron, who served as convention chairperson.

A twenty year continuous membership plaque was presented to State Sales in appreciation for their support of the association throughout past conventions.



Greater Southern officials called the two day service seminar "most successful."

Approximately 75 participants came from Georgia, Tennessee, Florida, and South Carolina to attend the Bally-Midway service seminar in Atlanta.

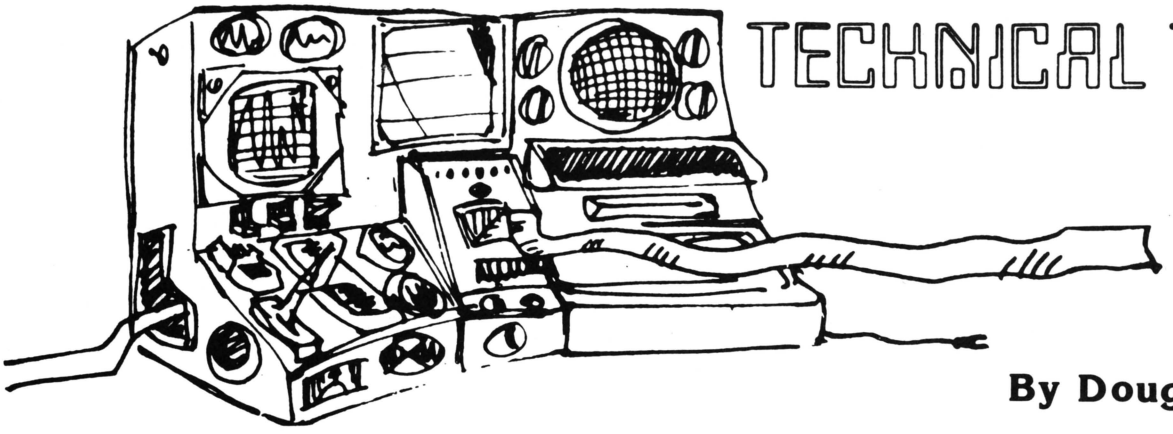
Greater Southern Hosts Seminar

Greater Southern Distributing Company in Atlanta, Georgia, in conjunction with Bally and Midway, recently held a two day service seminar in Atlanta.

Gene Williams of Bally and Andy Ducay of Midway conducted the school, which drew approximately 75 participants from Georgia, Tennessee, Florida, South Carolina, and Mississippi.

"The instructors gave us an overview of the games," Rubin Piha, office manager for Greater Southern, reported. "The Midway representative went through the games, such as *Space Invaders*, *Phantom* and their bowling alley games, teaching technicians proper maintenance and troubleshooting of the boards.

"Bally covered operation of the microprocessor and the prefabricated integrated circuits, as well as the proper maintenance and care of the boards," he said. "Gene Williams also had a problem solving session, where he'd create a problem, then call on people in the audience to solve it."



TECHNICAL TOPICS

By Doug McCallum

How to find those pesky shorts

Editor's Note: *Operators still in possession of some of the electro-mechanical games may find this article on shorts helpful. However, the information does not apply to solid state games.*

Shorts and their symptoms (circuit path interruptions due to faults in the current limiting circuitry—also known as blown fuses) can be exasperating little devils to figure out, and I regret to announce there are no simple ways to find them.

However, I herein offer some tips and techniques that should help. I will limit this essay to 24 volt shorts, but light shorts (six volt) can be dealt with similarly.

First, shorts come in different types: the dead short, the "slow" short (blows the fuse after a couple of seconds rather than immediately), and the occasional short (blows fuse only when the shorted path is turned on).

Dead shorts can be tough—often they can't be helped by the schematic. As with any short we use a breaker.

First look for loose quarters or hardware lying about, nuts and bolts seem to fall across relay blades while quarters usually find their way under jones connectors and other goodies near the front, but you never know. If nothing obvious shows up and you don't see any burnt up coils, it becomes time to isolate the problem—unplug the playfield.

Short still there? Unplug the head...short still there? Time to check out the mechanical board.

Once you've found where the short is (say, the playfield) you can further narrow it down by figuring out which jones plug carries the shorted line.

Many machines, especially Bally and Williams, list jones plug connections either on the schematic or in the instruction manual. Once you narrow it down to a few wires, you should have no trouble finding which one is shorted and where. Just think—you're done before lunch.

Slow shorts are found similarly but an ammeter is a better tool than a circuit breaker because you don't have to wait for the breaker to blow.

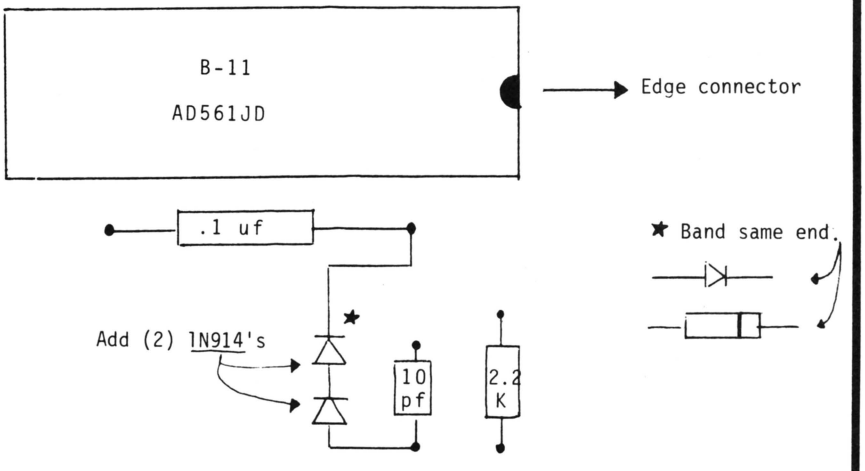
Occasional shorts are the best. Generally, you can associate them with some activity (pop bumpers, advance bonus, whatever), which are simple enough. Sometimes it involves the scoremotor (reset sequence, etc.) No problem: pull out the scoremeter service jack and step the scoremotor around *slowly* by hand. When you find which stack controls the short, look it up. Most games have scoremotor contact listings either in the schematic or the instruction book.

If these basic maneuvers fail, well, take your lunch break and stick with it—it's time to start unhooking wires. When you have something like a ten point line shorted you have no course but to disconnect and thus isolate areas of the machine and, ta da, if you keep narrowing it down, you'll find it, by golly.

Technical tip on Atari's LUNAR LANDER

There is a letter in a square on the bottom of the main PCB near the edge connector: A , B , or C . If your board is A or B , perform the following modification to protect the 4016B in location A12 from excessive input voltage.

Install (2) In914 diodes next to the device in location B-11 as shown.



Note: DO NOT replace the 4016B's with 4066's. Switching characteristics of the 4066 make it unacceptable for use in sample and hold circuit applications.

The straight poop on flippers:

Why 'dis' makes 'dat' work

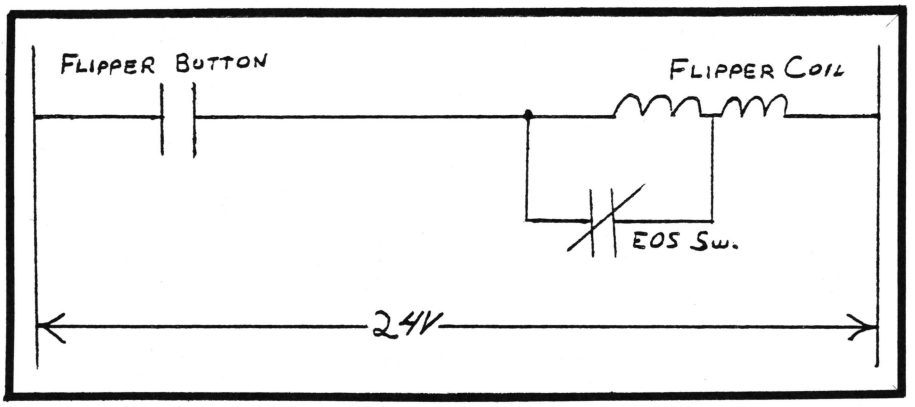
It is all well and good to know that, "if I fix dis...den dat will work," and the game will be up, but it is often helpful to know *why* "dis" makes "dat" work. Here's what's happenin' in a flipper.

The flipper coil consists of a double winding, two coils in one, so to speak. First, a "pull-in" winding constructed of heavier gauge wire and fewer turns. Second, a "hold-in" winding is bypassed by the normally closed end of stroke (EOS) switch.

The pull-in winding draws higher current, producing a very strong pull-in stroke. However, if this were to remain energized (the player keeps her/his finger on the button, say) it would soon overheat.

To reduce the high current after the strong pull stroke is completed, the hold winding is put in series with the pull-in winding by action of the opening EOS switch that had been bypassing the hold coil. The extra winding in series raises the overall resistance of the coil thus lowering the current. Believe me, it works that way.

With both windings "on" the resulting magnetic field is much weaker but is sufficient to hold the flipper up.



Thus we can see that if the EOS is dirty, open, or disconnected we will have the low current or "weak" condition. Likewise, if the hold-in winding is open we will get a chattering flipper. The pull-in coil works but as soon as the EOS opens there's nothing to hold the flipper up so the EOS closes again...and again...and again... Of course, if the pull-in winding is open—nothing will happen.

How to cure the weak flipper:

—The EOS switch should have a great deal of "scrub" and should open just before the flipper is fully up.

—The flipper return spring should not be too strong—remember the coil has to fight this spring to move the flipper.

—Make sure the solenoid plunger has not "mushroomed"—just a little bit of friction can really weaken a flipper.

—Lube: the nylon bushing and the linkage may be oiled but *never* the solenoid plunger.

Industry tribute to Fishman nets Israel $5.5 million

An outpouring of financial support for Israel's economic development was demonstrated in Chicago recently at a national dinner which honored William S. Fishman, chairman and chief executive officer of ARA Services, Inc., a diversified services management company.

The tribute resulted in purchases of $5.5 million in Israel Bonds and other securities.

The dinner was part of a nationwide effort by the Israel Bond Organization to provide Israel with investment dollars through a $1 billion "Economic Development for Peace" loan. The new issue, Sixth Development State of Israel Bond issue, was launched to help Israel develop the Negev and undertake other projects necessary for the implementation of the peace treaty.

Ephraim Evron, Israel's ambassador to the U.S., presented his country's "Prime Minister's Medal" to Fishman, commending him and the bond organization for the "tremendous contribution" they have made to the future of Israel.

Meyer Gelfand, chairman of the Macke Company and dinner chairman, told the 600 representatives of the automatic merchandising, linen-laundry, periodicals distribution, and health services industries who were present that bond purchases were "proof of the wholehearted support of the business community, both Jewish and non-Jewish, for Israel's progress toward peace and economic security."

Howard C. Miller, president of the Canteen Corporation; Marvin Heaps, president of ARA Services, and Alvin W. Cohn, president of CFS Continental, also participated in the program.

The $1 billion "Economic Development for Peace" loan will help to provide investment dollars for the building of an entire new infrastructure in the Negev. Industries, jobs, roads, communications, transportation and energy, are to be provided at a cost estimated at billions of dollars.

Some of the priorities for which Israel bond dollars is needed include energy, water projects, telecommunications, and transportation.

Atari videos:

Teaching an old dog new tricks

Want to add a new twist to an old game? Improve the image or response? The following list contains modifications for game improvement designed to increase player appeal.

Modifications should be performed with the logic board removed from the game to a suitable work bench, and using the proper tools to avoid possibly damaging the PCB.

Pong

To center the game and remove curve at top of net:

1. Clip and lift pin 12 on chip A4.
2. Install a 7427 IC on board. Chip may be glued to existing chip in piggyback fashion. (G2 another 7427).
3. Connect pin 7 of 7427 to ground.
4. Connect pin 14 of 7427 to +5 volts.
5. Jump F9 pin 8 to 7427 pin 1.
6. Jump F9 pin 9 to 7427 pin 2.
7. Jump H5 pin 6 to 7427 pin 13.
8. Jump 7427 pin 12 to D1 pin 9.
9. Jump D1 pin 8 to lifted pin 12 on A4.

Pong Doubles

To remove extra paddle on left side:

1. Cut and lift pin 10 on H1.
2. Jumper H6 pin 11 to F1 pin 13.
3. Jumper H6 pin 12 to F1 pin 6.
4. Jumper H6 pin 13 to H6 pin 6.

Super Pong

To remove paddle on right side:

1. Perform modification as listed for centering the game on *Pong*.

Elimination and Quadrapong

To make ball travel at full speed constantly:

1. Clip and lift E2 pins 8 and 11.
2. Jumper the traces going to E2 pin 8 and 11.
3. Jump traces to 5V pull-up resistor.

Pursuit

To double plane size:

1. Clip and lift K5 pins 4 and 2.
2. Jump C1 pin 9 to K5 pin 2.
3. Jump E4 pin 5 to K5 pin 4.

Qwak

Decrease shot size by ½:

1. Add a 7408 piggyback on board.
2. Clip and lift D2 pins 11 and 12.
3. Jump D2 pin 11 to 7408 pin 1.
4. Jump D2 pin 12 to 7408 pin 2.
5. Jump 7408 pin 3 to F3 pin 4.

Anti Aircraft

Disable missiles during attract mode:

1. Clip and lift B8 pin 8.
2. Jump B8 pin 8 to E8 pin 4.
3. Jump D8 pin 8 to E8 pin 5.
4. Jump E8 pin 6 to trace going to B8 pin 8.

Conversion to 50-cent game (1 or 2 plays):

1. Add a 7474 at location A8 on PCB.
2. Jump A8 pin 2 to A8 pin 6.
3. Jump A8 pin 5 to A8 pin 12.
4. Jump A8 pin 1 to A8 pin 13.
5. Jump A8 pin 3 to A8 pin 11.
6. Jump A8 pin 4 to A8 pin 10.
7. Cut and lift F8 pin 9.
8. Jumper F8 pin 9 to A8 pin 3.
9. Jumper D8 pin 9 to A8 pin 1.
10. Jumper E9 pin 1 to A8 pin 8.
11. Jumper A8 pin 4 to 1K resistor located between IC's D7 and C7. (Run jumper to end of 1K closest to C7 pin 5, not to the +5 volt buss.)
12. Change D5 (IN 914) to a 1 uf electrolytic capacitor (+side to E9 pin 8).

Steeplechase

To make the game time 60 seconds:

1. Solder bridge the split pad labeled "2M" located between H3 and J3.
2. Clip and lift H3 pin 6.
3. Jumper H3, pin 6 to the end of the 1K resistor closest to J3 pin 1.

To make the game time 120 seconds:

1. Jump split pad labeled 2M.

NOTE: Game is normally 1½ minutes long.

Tank

To make tank shell shoot around corners:

1. Clip and lift pins 1 and 2 on chips M2 and M4, and after shell is fired, if tank is rotated, the shell will move with the tank rotation.

To charge tank playfield:

1. Short D9 pin 6 to ground.

Tank—19-inch Monitor

To minimize playfield flutter:

1. Install 2000 uh inductor across R54 (39 ohm) on TV PCB. (This will parallel the existing 2000 uh inductor).

If this does not solve the problem and an adjustment of the Vertical Hold does not minimize the problem, perform the following:

1. Clip and lift B11 pin 6.
2. Jump B11 pin 6 to B7 pin 11.
3. Jump B14 pin 3 to B7 pin 13.
4. Jump B11 pin 11 to B7 pin 12.

Trak 10 and Formula K

To change Race Track display:

1. Clip and lift L5 pin 13.
2. Jump L5 pin 13 to a 1K pull-up resistor.
3. To delete slick—cut C2 pin 4 and video resistor.

Formula K

Automatic Track change with free play:

1. Jump K8 pin 2 A1 pins 11 and 12.
2. Jump K8 pin 5 from cut trace running from L5 pin 13.

Twin Racer/GT 20

Track change:

—There are three pads next to chip A3.

—Using the center as common point jump to ground side to change tracks.

To improve steering response on GT 10, 20, Twin Racer and Formula K:

Trak 10, Formula K:

1. Clip and lift A4 pin 13.
2. Clip and lift A4 pin 11.
3. Clip and lift A4 pin 12.
4. Tie A4 pin 12 to a 1K pull-up resistor.
5. Jump A4 pin 11 to J8 pin 6.
6. Jump A4 pin 13 to H1 pin 8.

Trak 20 and Twin Racer—Digital Board:

1. Clip and lift C10 pin 12 and tie to 1K pull-up.
2. Clip and lift C10 pin 11 and jumper pin to trace going to C10 pin 12.
3. Clip and lift D10 pin 2 and tie to A 1K pull-up.
4. Clip and lift D10 pin 3 and jumper pin 3 to trace going to D10 pin 2.
5. Clip and lift C10 pin 13 and D10 pin 1.
6. Jump C10 pin 13 and D10 pin 1 to L7 pin 8.

Watch for AMOA review...

coming up in PLAY METER

Classified

TEN ROWE 27-100 Cigarette vendors. All complete and functional. All with $1.00 accumulators. Several with 100 mm conversions. $50 each or make offer. MONTROSE MUSIC COMPANY, P.O. Box 1623, Montrose, CO 81401. Tel. 249-3343.

FOR SALE: Video Arcade Games: Atari's Tank Battle was $1595 now $900. Ramtech's Barricade 25-cents–50-cents was $925 sacrifice $700. Write or call DAVID A. HOLCOMB, 3830 North Shelby Lane, Douglasville, GA 30135. Tel. 404/942-0549.

FOR SALE: One Gremlin Playball wall game. Good condition. $1000. Write TAMBOURINE ENTERPRISES, INC., 785 Aster Street, Baton Rouge, LA 70802.

REWARD! We have $100,000 to spend on slot machines, jukeboxes, arcade or any gambling machines. Tel. 414/968-4540.

D.R.A. PRICE GUIDE offers complete up to date information on price values of used equipment. For free sample ½ booklet write–DISTRIBUTORS RESEARCH, 262 N.W. 29th St., Miami, FL 33127.

FOR THE BEST IN USED FLIPPERS, VIDEO GAMES, and arcade equipment at the cheapest prices see our regular ad in the classified section of PLAY METER MAGAZINE. NEW ORLEANS NOVELTY COMPANY, 1055 Dryades Street, New Orleans, LA. Tel. 504/529-7321.

PINBALL TOURNAMENTS: If you have a location with a minimum of 15 pinballs, please write us. PINBALL ASSOCIATION OF AMERICA, INC., 333 N. Michigan, Suite 2025, Chicago, IL 60601.

PINBALL TOURNAMENT KITS $25, Pinball Wizard News, $10 per year. NATIONAL PINBALL WIZARD ASSOCIATION, 200 U.S. 1, Linden, NJ.

SCHOOL FOR GAMES & MUSIC one to three week courses. Phonos, videos, electro-mech and logic flippers. By schematics! CAL'S COIN COLLEGE, P.O. Box 810, Nicoma Park, OK 73066. Tel. 405/769-5343.

NEW AND USED KIDDIE RIDES $400 and up. PAUL W. HAWKINS, MFG., 3119 E. Pennsylvania St., Tucson, AZ 85814. Tel. 602/294-1607.

TRADE OUR ARCADE PIECES FOR YOURS. Equal value. Good condition. For copy of our list write N. LEE ARNOLD, LEMANS SPEEDWAY, 7700 E. Kellogg, Wichita, KS 67207. Tel 316/685-1446.

FOR SALE: New Red, Blue, Yellow, and Green Sunburst 10 pt. when lite caps used on 1960-72 pinball games. DON MURPHY, 2015 N. Kolmar Avenue, Chicago, IL. Tel. 312/235-3360.

FOR SALE: Air Ace, Big Valley, Jungle, Jackpot, Jack-in-the-Box, King Rock, Rogo, 5-in-1 Elcon, 21 Blackjack, Sparetime, Amigo, Tic-tac-toe, Space Riders, Butterfly, Jubilee, Marstrek, Roy Clark [The Entertainer]. NORTH AMERICAN INTERSTATE, INC., 3842 W. 11 Mile Road, Berkley, MI 48072. Tel. 313/543-1666.

WANTED: Playboy, Kiss, Space Invader, Superman, Lost World, Fire Ball. NOVEL PINBALL CO., 5931 10th Avenue, New York, NY 10036. Tel 212/736-3868.

SERVICEMAN: 23 year old male experienced in S.S. and electro-mechanical pinballs, video games, jukebox and sound reinforcement looking for work with organized company. Salary negotiable. Willing to relocate. DARRELL 515/243-0794 or 515/279-7061.

WANTED: Mechanic Pins. NOVEL PINBALL CO., 593 10th Avenue, New York, NY 10036. Tel. 212/736-3891.

FOR SALE: Atari Ultra Tank, Star Ship I, Cinematronics Space Wars, Brunswick Air Hockey. Good condition. Priced right. Call NEWMARK ENT., Eugene OR. 503/484-6029.

COLLECTOR OF OLD COIN OPERATED MACHINES wants old and unusual slot and arcade machines. Please call ROGER 312/849-4041.

FREE

Your classified ad will be listed here absolutely free of charge. Simply fill out your ad on a 3X5 card and mail it to Play Meter Update, P.O. Box 24170, New Orleans, La. 70184.

Please print your ad clearly and limit it to 30 words or less. Additional words may be purchased at the rate of .25 per word. Please enclose check or money order with over-run ads. Over-run ads received without payment of extra wordage will be edited to size, if possible, or discarded completely.

Classified display rates are available at the flat rate of $10.00 per column inch. This *FREE CLASSIFIED* offer is strictly for paid subscribers only.

LIMIT—one ad per subscriber please.

PLAY METER
P.O. Box 24170
New Orleans, La. 70184

2nd Class
U.S. Postage Paid
New Orleans, La.
70113

2265 280

RIS SLIMMER